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09/702,788	11/01/2000	Gilbert Verghese	11309-001	1110
1059	7590	05/18/2005	EXAMINER	
BERESKIN AND PARR 40 KING STREET WEST BOX 401 TORONTO, ON M5H 3Y2 CANADA			JERABEK, KELLY L	
			ART UNIT	PAPER NUMBER
			2612	

DATE MAILED: 05/18/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/702,788

Applicant(s)

VERGHESE, GILBERT

Examiner

Kelly L. Jerabek

Art Unit

2612

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 18 November 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1,3-47 and 56-63 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 16-26 is/are allowed.
- 6) ☐ Claim(s) 1,3-15 and 27-41 is/are rejected.
- 7) ☒ Claim(s) 42-47 and 56-63 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- ☐ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 11/18/2004
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Response to Arguments***

Applicant's arguments with respect to claims 1, 3-15, and 27-41 have been considered but are moot in view of the new ground(s) of rejection.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

**Claims 1, 3-12, 14-15, 27-30, and 35-41 rejected under 35 U.S.C. 103(a) as being unpatentable over Wada et al. US 6,714,236 in view of Richards et al. US 6,027,257.**

Re claim 1, Wada discloses in figures 9 and 10 a composite camera for use in a security camera system. The security camera system includes a pair of supports (113) for holding the image capture device (102) (col. 2, lines 63-67). In addition, the security camera system includes a processing device (70) that detects a motion from the pictures taken by a composite camera (61) and checks the current monitoring place of the composite camera (61) thus determining an object location value for the object

Art Unit: 2612

based on digital images (col. 9, lines 44-53). The composite camera (61) serves as a position control device for rotating the supports (113) and the image capture device (102) about two axes so that the object remains within a center region of the digitized image frames and it is coupled to the support (113) (figs. 9,10) (col. 9, lines 49-63). The composite camera (61) includes a base (107), a first motor (24) mounted on the base (107) for generating a first rotational movement (pan) based on the object location and a first rotational member (103) connected to the first motor (24) for rotation about a first axis (col. 2, line 63 - col. 3, line 57). Additionally, the composite camera (61) includes a second motor (28) mounted on the base (107) for generating a second rotational movement (tilt) based on the object location and a second rotational member (105) connected to the second motor (28) for rotation about the second axis (col. 2, line 63 – col. 3, line 57). The Wada reference discloses all of the above limitations however, the reference fails to disclose the specific components and configuration of the first motor (24) and the second motor (28).

Richards discloses in figures 1-3 a pan-tilt unit for positioning videoconferencing or surveillance cameras. The pan-tilt unit (20) includes a first motor (34) comprising a first shaft member (40) having a first shaft rotation axis longitudinally concentric with the first shaft member (40) (col. 3, line 57 – col. 4, line 15) and a second motor (36) comprising a second shaft member (76) having a second shaft rotation axis longitudinally concentric with the second shaft member (76) (col. 4, line 16 – col. 4, line 60), such that the first shaft rotation axis and the second shaft rotation axis are motionless and fixed relative to one another and such that when the first shaft member

Art Unit: 2612

rotates the second shaft rotation axis remains fixed relative to the first shaft rotation axis (col. 3, line 57 – col. 5, line 65). Therefore, it would have been obvious for one skilled in the art to have been motivated to include a pan-tilt unit as disclosed by Richards in the security camera system disclosed by Wada. Doing so would provide a means for ensuring that a pan motor and a tilt motor are stationary relative to a base during panning and tilting operations so that it is not necessary to physically move the mass of either of the motors (Richards: col. 2, lines 46-51).

Re claim 3, Richards discloses a first tendon (40) for coupling the first motor (34) a first rotatable member and a second tendon (58) for coupling the second motor (36) to a second rotatable member (figs. 1-3; col. 3, line 57 – col. 4, line 28).

Re claim 4, Richards states that a second axis (tilt axis 32) rotates about a first rotation axis (pan axis 30) during the rotation of a first rotatable member (pan platform 24) and a second tendon (58) is substantially aligned with the first rotation axis (pan axis 30) so that rotation of the first rotatable member (pan platform 24) about the first rotation axis (pan axis 30) occurs without any relative rotation between the first (24) and second (26) rotatable members (col. 5, lines 35-65).

Re claim 5, the first axis (pan axis 30) disclosed by Richards provides a horizontal rotation and the second axis (tilt axis 32) provides a vertical rotation, therefore they are orthogonal to each other (fig. 1; col. 3, lines 21-56).

Re claim 6, Richards states that a base (22) is adapted to rest on a support surface and has a cavity region for housing first (34) and second (36) stationary motors (col. 3, lines 21-56; figs. 1-3).

Re claim 7, Richards discloses a mounting member (38) that attaches to the base (22) for securing the first motor (34) and the second motor (36) (figs. 1-3; col. 3, lines 44-56).

Re claim 8, Richards states that the mounting member (38) includes a vertical shaft member (52) for engaging a first rotatable member (24) (figs. 1-3; col. 4, lines 15-28).

Re claim 9, the first rotatable member (24) incuse a cylindrical hollow cavity for rotatably receiving the first vertical shaft member (52) of the mounting member (38) (figs. 1-3; col. 4, lines 15-28).

Re claim 10, see claim 1.

Re claim 11, the first axis (pan axis) is stationary (figs. 1-3).

Art Unit: 2612

Re claim 12, Wada states that the first axis (pan axis) can pan the composite camera 360 degrees therefore it is a major rotation axis and the second axis (tilt axis) can tilt the composite camera 180 degrees therefore it is a minor rotation axis (col. 2, lines 54-59; figs. 9, 10).

Re claim 14, Wada states that the image capture device (102) is a security camera that produces video signals therefore it is a video camera (col. 2, line 63 – col. 3, line 17).

Re claim 15, Wada states that the processing device (70) is a controller that includes a CPU (71) (col. 9, lines 44-53).

Re claim 27, see claim 1.

Re claim 28, when a moving picture detector (80) detects a motion in the pictures taken by the composite camera the CPU (71) of the controller (70) checks the current position of the camera (col. 9, lines 44-53). The controller (70) then transfers the motion point to the composite camera (61), enabling the composite camera (61) to be focused at the motion point (col. 9, lines 54-59). Therefore, an object center location (motion point) for the object in the picture is determined. The composite camera (61) controls panning and tilting in order to set the motion point in the center of the screen and the composite camera (61) is focused on the object in the center of the screen (col. 9, lines

Art Unit: 2612

59-63). Since the camera is panned and tilted to direct the motion point to the center of the screen, frame center location values (screen center) are determined and the object center location values (motion point) and frame center location values (screen center) are compared to determine the amount of rotation necessary to keep the object within the center region.

Re claim 29, the digitized image frames (pictures) contain object images such as people or animals (col. 9, lines 23-43).

Re claim 30, the controller (70) transfers a motion point to the composite camera (61), enabling the composite camera (61) to be focused at the motion point (col. 9, lines 54-59). Therefore, an object center location (motion point) for the object in the picture is determined. Furthermore, the centroid of the object image is determined in order to focus the camera at the detected motion point.

Re claim 35, see claim 14.

Re claim 36, the examiner takes Official Notice that it is well known in the art for multiple cameras to be used in image tracking. It would have been obvious to one of ordinary skill in the art at the time of invention for the security system disclosed by Mori to include multiple composite video cameras.



Re claim 37, the composite camera (61) includes a first motor (24) mounted on the base (107) for generating a first rotational movement (pan) based on the object location and a first rotational member (103) connected to the first motor (24) for rotation about a first axis (col. 2, line 63 - col. 3, line 57). Additionally, the composite camera (61) includes a second motor (28) mounted on the base (107) for generating a second rotational movement (tilt) based on the object location and a second rotational member (105) connected to the second motor (28) for rotation about the second axis (col. 2, line 63 – col. 3, line 57).

Re claim 38, the first axis (pan axis) can pan the composite camera 360 degrees therefore it is a major rotation axis and the second axis (tilt axis) can tilt the composite camera 180 degrees therefore it is a minor rotation axis (col. 2, lines 54-59; figs. 9, 10).

Re claim 39, see claim 37.

Re claim 40, the first axis (pan axis) can pan the composite camera 360 degrees therefore it is a major rotation axis and the second axis (tilt axis) can tilt the composite camera 180 degrees therefore it is a minor rotation axis (col. 2, lines 54-59; figs. 9, 10). Additionally, the minor rotation axis (tilt axis) rotates about the major rotation axis (pan axis) (fig. 9).

Re claim 41, the major rotation axis is stationary relative to the first shaft rotation axis (figs. 9, 10).

**Claims 13, 31, and 33-34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wada in view of Richards and further in view of Morisaki US 5,416,513.**

Re claim 13, the combination of the Wada and Richards references discloses all of the limitations according to claim 1 above, however Wada in view of Richards fails to state that the object selected is associated with a specific color and the object location is the center of the region of the selected color within the digitized frame.

Morisaki discloses in figure 1 a video camera system including an object pursuing device. The video camera (1) of the system is moved according the movement of the specific color of the object so that the object is always in the center portion of the image (col. 6, line 37 – col. 7, line17). This shows that the object has a selected color and the object location is the centroid of the region of the selected color of the digitized frame. Therefore, it would have been obvious for one skilled in the art to have been motivated to include the video camera system capable of moving a camera according to the color of an object as taught in Morisaki in the composite camera for use in a security system as disclosed by Wada in view of Richards. Doing so would provide a means for pursuing an object by utilizing a specific color picked up from a shooting object (Morisaki: col. 2, lines 6-9).

Re claim 31, see claim 13.

Re claim 33, the video camera (1) of the system is moved according the movement of the specific color of the object so that the object is always in the center portion of the image (col. 6, line 37 – col. 7, line17). Therefore, the centroid of the digitized image must be calculated in order to move the video camera (1) so that the object is always in the center portion of the image.

Re claim 34, see claim 33.

**Claim 32 rejected under 35 U.S.C. 103(a) as being unpatentable over Wada in view of Richards in view of Morisaki as applied to claim 31 above and further in view of Potts et al. US 6,593,956.**

Re claim 32, the combination of the Wada, Richards, and Morisaki references discloses all of the limitations according to claim 31 above, however Wada in view of Richards in view of Morisaki fails to distinctly stat that the step of determining the object center location values for the object includes locating a pixel at the center of a group of pixels within a region of a selected color.

Potts discloses in figure 9 a flowchart of the steps taken by a face-location tracking module (106) of a camera-pointing module. The camera-pointing module is

Art Unit: 2612

capable of panning and tilting a camera in order to track an object (col. 13, lines 25-36).

The face-location tracking module (106) of the camera-pointing module determines the location of the pixel that represents the center of a detected face (col. 14, lines 12-37).

Therefore, it would have been obvious for one skilled in the art to have been motivated to include the face-location tracking module (106) capable of locating a pixel in the center of a group of pixels as taught in Potts in the composite camera for use in a security system as disclosed by Wada in view of Richards in view of Morisaki. Doing so would provide a means for tracking a detected object in order to obtain a proper position of the object (col. 7, line 66 – col. 8, line 7).

### ***Allowable Subject Matter***

#### **Claims 16-26 allowed.**

The following is a statement of reasons for the indication of allowable subject matter: the prior art of record fail to anticipate or render obvious the following technical features as recited in the highlighted claims:

- a. “an image tracking system including...a third rotatable member comprising the first support and a fourth rotatable member comprising the second support, said third and fourth rotatable members being mounted on the second rotatable member, at least one of said third and fourth rotatable members being rotably

Art Unit: 2612

mounted to said second rotatable member; and a third motor mounted on the base for providing relative rotation between said third and said fourth rotatable members” as recited in claim 16. Claims 17 – 26 are dependent on claim 16 and are allowable for the reasons stated above.

**Claims 42-47 and 56-63 objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.**

The following is a statement of reasons for the indication of allowable subject matter: the prior art of record fail to anticipate or render obvious the following technical features as recited in the highlighted claims:

Re claim 42, the prior art fails to teach or suggest “an image tracking system... wherein step (c) further comprises providing a third rotational movement to the image capture device about a third axis using a third motor and providing a third rotational movement to the image capture device about a fourth axis using a fourth motor such that the object remains within a center region of each of the digitized frames” as recited in claim 42. Claims 43-47 are dependent on claim 42 and are allowable for the reasons stated above.

Art Unit: 2612

Re claim 56, the prior art fails to teach or suggest "an image tracking system including a tension regulation device comprising... a platform; a resilient column rotatably mounted on the platform and having a cross-section with a first radius; a splined column rotatably mounted on the platform and having a plurality of spline members extending radially and having a cross-section with a second outer radius, said splined column being adapted to receive a portion of the tendon therearound; said resilient column being spaced apart from said splined column and rotatably mounted on said platform at a distance equal to slightly less than the sum of the first and second radius; and such that in the absence of tension the spline members slightly deform said resilient column to restrict rotational movement of said spline column and said tendon and in the presence of tension, the spline members are forced to travel along the surface of said resilient column and to unwind the portion of the tendon around the splined column". Claims 57-60 are dependent on claim 56 and are allowable for the reasons stated above.

Re claim 61, the prior art fails to teach or suggest "an image tracking system including a tendon motor pulley comprising... a first disc; a second disc, the first and second discs having facing surfaces; a hub positioned concentrically between said first and second discs and at least one engagement means extending between the first and second discs and located radially outwardly from the hub, whereby a tendon can travel freely around the hub and the engagement means engages the tendon". Claims 62-63 are dependent on claim 61 and are allowable for the reasons stated above.

### ***Conclusion***

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

### ***Contacts***

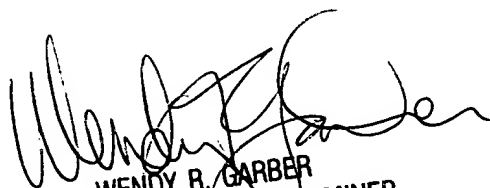
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kelly L. Jerabek whose telephone number is **(571) 272-7312**. The examiner can normally be reached on Monday - Friday (8:00 AM - 5:00 PM).

Art Unit: 2612

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wendy Garber can be reached on **(571) 272-7308**. The fax phone number for submitting all Official communications is 703-872-9306. The fax phone number for submitting informal communications such as drafts, proposed amendments, etc., may be faxed directly to the Examiner at **(571) 273-7312**.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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